

Claims

1. A metering device for flowable products, in particular, dairy products, comprising a metering cylinder (6), a valve cylinder (7) coaxially arranged therein and connected at an upper end to the reservoir (3), a ring-shaped metering piston (8) movable in the annular chamber (9) between metering cylinder (6) and valve cylinder (7) between an upper intake end position and a lower dispensing end position, wherein the metering piston divides the annular chamber (9) into an upper part connected to the product reservoir and a lower part forming the metering chamber (11), further comprising a mouthpiece (13) closing the metering chamber (11) at the bottom side with the exception of a coaxial cylindrical dispensing opening (12), and comprising a central valve piston (15) movable into operating positions releasing or closing the annular chamber (9), characterized in that the valve cylinder (7) with the valve piston (15) forms of rotatable control unit that, in a first rotary position, connects the metering chamber (11) with the supply channel (14) in the valve cylinder (7) and, in a second rotary position, connects the metering chamber (11) to an outlet channel (16).

2. The metering device according to claim 1, characterized in that in the control unit the valve piston (15) constitutes the lower end of the valve cylinder (7) and at the same time the lower end of the supply channel (14) in the valve cylinder (7), wherein the valve cylinder (7) in the area directly above the upper side of the valve piston (15) is provided with at least one transfer opening (17), through which, in the first rotary position of the control unit, the product (P) can be transferred into at least one axial transfer channel (18) that communication with its upper end with the metering chamber (11) and, in the first rotary position of the control unit, is closed in the area of its lower end and, in the second rotary position, can be connected to the outlet channel (16) in the valve piston (15).

3. The metering device according to claim 1 or 2, characterized in that the

control unit has several transfer openings (17) and/or transfer channels (18) and/or outlet channels (16).

4. The metering device according to one of the claims 1 to 3, characterized in that it has two transfer channels (18) that are arranged staggered by 180° in a support plate (19) of the device and open at a bottom side of the metering chamber (11).

5. The metering device according to one of the claims 1 to 4, characterized in that as transfer channels (18) longitudinal grooves (21, 22) are provided in the support plate (19) and are radially formed within an engagement opening (20) for the valve piston (15).

6. The metering device according to one of the claims 1 to 5, characterized in that in the circumferential direction between the two longitudinal grooves (21, 22) a curved section (23) that conforms to the contour of the valve piston (15) is provided in the engagement opening (20) and the valve piston (15) rests against it in the respective rotary position (S).

7. The metering device according to one of the claims 1 to 6, characterized in that the longitudinal grooves (21, 22) are covered from below by the mouthpiece.

8. The metering device according to one of the claims 1 to 7, characterized in that the control unit in the area of the valve cylinder (7) has two transfer openings (17) in the form of wall slots (24, 25) positioned opposite one another and staggered by 180° and opening into the longitudinal groove (21, 22), respectively, and the transfer openings have correlated therewith two transverse openings (27, 28) in the area of the valve piston (15) that open into the outlet channel (16) staggered by 90°.

9. The metering device according to one of the claims 1 to 8, characterized in

that the supply channel (14) is a central bore extending in the control unit and has wall penetrations (29) as connecting openings to the reservoir (3) at its upper end area facing away from the valve piston (15) arranged underneath.

10. The metering device according to one of the claims 1 to 9, characterized in that the control unit in the area of the outlet channel (16) extending in the valve piston (15) cooperates with a bottom opening (30) provided in the mouthpiece (13) whose flow cross-section (B) extends across a partial area of the end face (B') of the valve piston (19).

11. The metering device according to one of the claims 1 to 10, characterized in that the outlet channel (16) in the area between its transverse openings (27, 28) has a longitudinal channel (31) that extends at least partially at a parallel spacing (F) to the longitudinal center axis (M) of the valve piston (15), wherein the longitudinal channel in the second rotary position of the control unit is at least partially in an overlap position with the bottom opening (30) of the mouthpiece (13).

12. The metering device according to one of the claims 1 to 11, characterized in that the outlet channel (16) has a longitudinal channel part opening immediately into one of the longitudinal grooves (21, 22) in the support plate (19).

13. The metering device according to one of the claims 1 to 12, characterized in that the bottom opening (30) of the mouthpiece (13) extends parallel and at a spacing (F) to the longitudinal center axis (M) of the valve piston (15).

14. The metering device according to one of the claims 1 to 13, characterizing that the metering chamber (11) in the area near the longitudinal grooves (21, 22) has a radially widened shape (32).

15. The metering device according to claim 14, characterized in that the radially

widened shape (32) has a length releasing the metering piston (8) in a lower extended position (R).

16. The metering device according to one of the claims 1 to 15, characterized in that the control unit is axially movable into an upper service position (E) at least out of its engagement position in the mouthpiece (13).